

## ABSTRACT OF THE DISCLOSURE

A material includes a layer with a plurality of self-assembled structures comprising compositions. The structures are localized in separate islands covering a portion of the layer in an integrated assembly. In some embodiments, the compositions include nanoparticles. In particular, some embodiments pertain to a material with a self-assembled formation of inorganic particles with an average diameter less than about 100 nm. The structures can be used as devices within an integrated article. The method for producing the articles comprise a localization process defining boundaries of the devices and a self-assembly process within the identified boundaries.